

On two little-known Opisthoglyphous Snakes. By G. S. WEST, A.R.C.S., Scholar of St. John's College, Cambridge. (Communicated by Prof. G. B. HOWES, Sec. Linn. Soc.)

[Read 19th March, 1896.]

(PLATE XVIII.)

HAVING been recently engaged at the Royal College of Science, London, in an investigation of the buccal apparatus of the opisthoglyphous ophidians *, there were forwarded to me a few months ago by Prof. Howes a couple of snakes, and with them a note asking me to examine their buccal characters. At the same time I also received a letter from Mr. G. A. Boulenger asking me to clear up as much as I was able with regard to their glands and teeth. One of the snakes was an *Erythrolamprus*, and the other an animal about which there was a doubt as to whether it was an aglyphous variety of *Erythrolamprus* or some other snake. The latter was one of three specimens from Nicaragua, all of which were aglyphous, which had been regarded as an aglyphous variety of *Erythrolamprus* by Dr. Günther †. In external features and coloration the snakes were absolutely identical, but if their dentition and buccal characters differed, it was possible, as suggested by Mr. Boulenger, that the aglyphous one might belong to a genus closely allied to *Liophis*.

The following is a description of the glands and teeth of the first snake, viz. :—

ERYTHROLAMPUS ÆSCULAPII, Günth.

The *poison-gland* (fig. 1 *g.p.*) is a large pear-shaped mass having a slight sigmoid curve; its anterior pointed end is situated under the eye, and its posterior end reaches almost to the articulation of the mandible. It exhibits a marked lobulation, the lobules being arranged in series converging towards the central duct, which leaves the gland at about the middle of its ventro-internal face and passes in a slightly forward direction to the base of the first grooved tooth.

As in other opisthoglyphous snakes, the poison-gland is not

* Cf. P. Z. S. 1895, pp. 812-826.

† Biol. Centrali-Americ., Part cxxi. p. 166.

enveloped in any capsule of strong fibrous tissue, but is only held in position by an attachment of fibrous connective tissue along its inner surface. The alveoli of the poison-glands of all the snakes of this group have only small cavities and can hold but little of the secretion. There are no muscles related in any way to the gland*, and therefore the secretion which finds its way to the grooved teeth—and this can be but small in quantity—must do so by the pressure of the bite alone. The gland more or less overhangs the grooved teeth in most genera, and as the latter do not come into use unless the snake has obtained a very firm bite, it is evident that under these circumstances the pressure on the gland will be considerable and will suffice to propel the poison through the comparatively short duct to the teeth.

The *superior labial gland* consists of two distinct and isolated portions. The anterior part (*g.l.*') is composed of a series of somewhat irregular lobules, slightly embracing the anterior end of the poison-gland behind and reaching as far forwards as the nostril; the posterior portion (*g.l.*'') is very small and consists of a few lobules situated in the ventral hollow of the poison-gland near its hinder end.

The *inferior labial gland* extends along the greater part of the outer side of the mandible.

The *Harderian gland* (*g.h.*) is visible, on removing the skin, as a glandular mass of considerable size posterior to the eye, partially covered by the poison-gland.

The *maxilla* (fig. 2) possesses in all 12 teeth. The 10 anterior teeth, which are in a uniform series, are short, thick, and much curved, and they slightly increase in size towards the hinder end of the maxilla. The two posterior teeth are larger, almost straight, and directed backwards at a much greater angle than the others. On their anterior face they possess a shallow,

* In the Hydrophiinæ (marine snakes) there are no muscles connected with the poison-gland in *Distira cyanocincta*, *Enhydris Hardwickii*, or *Platurus fasciatus*, but in *Hydrus platurus* the gland is in relation with the masseter muscle.

C. J. Martin, "Snakes, Snake-poison, and Snake-bites," Journ. Sydney Univ. Medical Soc. vol. i. no. 2 (Hermes Med. Suppl.), remarks, p. xix, that "the fang, except in sea-snakes, is a functional tube." I find the fangs of sea-snakes to possess a closed groove quite as functional as that of the fang of an Elapine or Viperine snake.

widely open groove (*vide* fig. 4), and on their posterior face there is developed a cutting-edge.

The *mandibular teeth* are 16 in number, very small and upright, and set in a compact series with a slight increase in size anteriorly.

Now with regard to the second snake, viz. :—

? Aglyphous variety of *Erythrolamprus*, Günther.

[? *Liophis*, Boulenger.]

The buccal glands of this snake (*cf.* fig. 5) are precisely identical with those of *Erythrolamprus*, excepting that the inferior labial gland (fig. 5, *g.l.i.*) is not quite so extensive.

The mandibular teeth (*cf.* fig. 7) are precisely like those of *Erythrolamprus*, very small, closely set, and 17 in number.

There are the same number of maxillary teeth, viz., 12. The 10 anterior teeth are identical in form and disposition with the corresponding ones in *Erythrolamprus*, and the 2 posterior enlarged teeth only differ from the corresponding teeth in the latter genus *in the entire absence of a groove* (*vide* fig. 8). In fact, this is the only character which in any way distinguishes the buccal apparatus of these two snakes.

Hence this animal is nothing more nor less than an *aglyphous variety* of *Erythrolamprus*, *i. e.* of an “opisthoglyphous” snake.

This snake is famous for having bitten Mr. Quelch, the Curator of the Georgetown Museum, and for having led him* to a belief in “the venomous action of the secretion of harmless snakes.” The facts concerning it herein dealt with have a special interest in their bearings on recent classification †, and in consideration of the experimental work of Phisalix and Bertrand ‡ and others, of the recent discovery of a Burmese snake § having the loreal shield of a supposed harmless Colubrine and the poison apparatus of a viper, and, last but not least, of the existence of an individual of *Distira cyanocincta* with grooved mandibular teeth ||.

* J. J. Quelch, ‘Venom in Harmless Snakes,’ Zool. (3) xvii. 1893, p. 30.

† *Cf.* Boulenger, ‘Fauna of British India—Rept. and Batrachia,’ p. 277.

‡ *Cf.* especially Phisalix and Bertrand, Compt. Rend. tom. 118, p. 76.

§ *Azemiops Feæ*, Boulenger, P. Z. S. 1888, p. 266.

|| *Cf.* P. Z. S. 1890, p. 618.

EXPLANATION OF PLATE XVIII.

- Fig. 1. *Erythrolamprus Æsculapii*, Günth. Head from right side. The inferior labial gland is removed.
2. " " Right maxilla from below, $\times 8$.
3. " " Right mandible.
4. " " Transverse section of posterior maxillary tooth.
5. Aglyphous variety of *Erythrolamprus Æsculapii*. Head from right side.
6. " " " Left maxilla from below, $\times 8$.
7. " " " Right mandible.
8. " " " Transverse section of posterior maxillary tooth.

Reference letters.

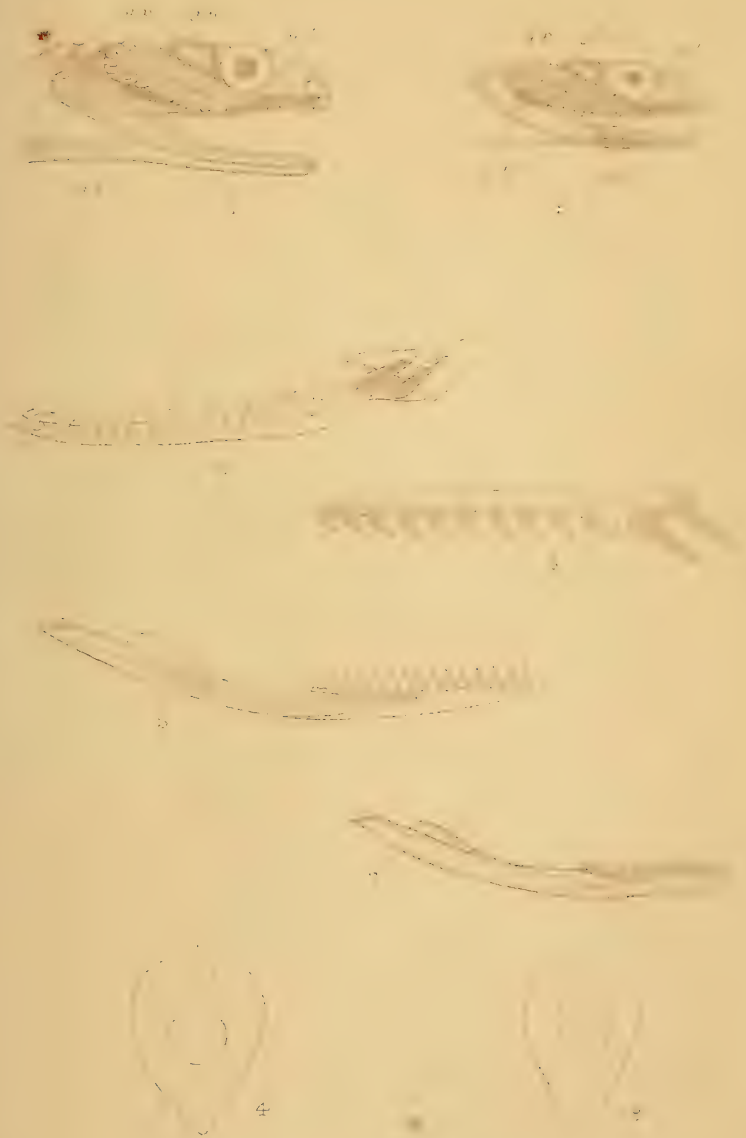
- g.h.* Harderian gland.
- g.l.* } Supra-labial gland.
- gl."* }
- g.l.i.* Infra-labial gland.
- g.p.* Parotid (Poison) gland.

On some Exotic Fossorial Hymenoptera in the Collection of the British Museum, with Descriptions of New Species and of a New Genus of the *Pompilidæ*. By Lt.-Col. C. T. BINGHAM, F.Z.S., F.E.S. (Communicated by W. F. KIRBY, F.L.S.)

[Read 2nd April, 1896.]

(PLATE XIX.)

WHILE engaged in incorporating accessions and rearranging the collection of the *Pompilidæ* and other Fossorial Hymenoptera in the Museum of Natural History at South Kensington, I have found a number of species which, so far as I can make out, have not previously been described. In the classification of the *Pompilidæ* I have in this paper followed Kohl. His "Die Gattungen der Pompiliden," published in the Verhandlungen der k.-k. zoologisch-botanischen Gesellschaft in Wien, 1884, contains by far the best arrangement of the genera of that very difficult and puzzling family.



G.S. West del.
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West, Newman imp

ERYTHROLAMPUS ESCULAPII